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REMARKS/ARGUMENTS

Claims 38-74 are pending herein, claims 38, 49, and 70 being independent. Claims 38, 41, 42, 44, 45, 47, 48, 67, 70 and 74 have been amended. It is believed that the amendments are cosmetic only and, with respect to claim 70, places claim 70 in independent form.

The pending (final) Office Action objected to claims 70-73, as claim 70 was an improper multiply dependent claim. By the amendment above, claim 70 has been amended so that it is an independent claim, and in proper form. Withdrawal of this objection is therefore requested.

Claims 67 and 74 were also objected to as having grammatical errors therein. By the amendment above, these errors have been corrected, and so it is believed that this objection should, likewise, be withdrawn.

Claim 74 has been rejected under 35 U.S.C. § 112, second para., for an improper antecedent. By the amendment above, the antecedent has been corrected, and thus this rejection should also be withdrawn.

Claims 38-48 stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by United States Patent No. 4,183,316 (Bennett). The Examiner has allowed claims 49-69, and has indicated that claim 74 would be allowable if re-written to overcome the rejection under 35 U.S.C. § 112, second para., discussed above. By the amendment above, claim 74 has been amended to address the issue raised by the Examiner, and so it is believed that that claim is allowable. Early and favorable action is therefore solicited.

As to the rejection under 35 U.S.C. § 102(b), applicants have carefully considered the Examiner's rejection and the reasons offered in support thereof, and find they do not agree therewith. For the reasons which follow, it is respectfully submitted that the invention as claimed is

patentably distinct from the applied reference, and so withdrawal of the pending rejection and allowance of claims 38-48 are solicited.

The following description of the invention is taken from the specification, and is for the Examiner's convenience. It is not intended to argue any limitation not present in the claims, or to argue for any construction of a term in the claims that is more narrow than that which would be attributed to such term by one of ordinary skill in the art upon a full and fair reading of the specification. In addition, the following discussion is intended to be limited to claims 38-48, the claims rejected under 35 U.S.C. § 102(b), and not to any of the other claims.

The invention is directed to an element for providing buoyancy to an undersea conduit. The element includes a casing and a buoyancy fluid that is naturally in a gaseous state at ambient atmospheric temperature and pressure, and naturally in an entirely liquid state at the underwater depth to which the buoyancy element is immersed. Various types of fluids meet this definition of the buoyancy fluid, including ammonia (claim 42). Use of a fluid with the claimed properties permits the operation of the element without the need for heaters or other equipment (which may malfunction at the depths at which the element may be required to perform and which, in any event, add expense to the manufacture of the overall device).

Bennett, the sole reference applied by the Examiner, is directed to apparatus for controlling the depth of an object submerged in a liquid medium (Abstract, lines 1-2); such as sea water. The apparatus includes a sealed chamber 14 in which a working fluid 16 is retained. Bennett describes working fluid 16 as of one of three types:

1. “[A] fluid which is expandable when it is heated and contractable when it is cooled . . . [for example] a gaseous fluid such as nitrogen or a noble gas such as argon.” (col. 3, lines 2-5).

2. “[A] two-state working fluid . . . which has a liquid component 32 and a gaseous component 34. The working fluid could comprise a single fluid which is maintained partially in a liquid state and partially in a gaseous state while object 10 is submerged.” (col. 4, lines 33-37). Bennett identifies suitable fluids as water or freon. (col. 4, line 41).
3. “[T]he working fluid . . . could comprise a mixture of two fluids having different boiling points, one fluid being partially dissolved in the other.” (col. 4, lines 55-57). Bennett offers ammonia dissolved in water as the sole example of this embodiment. (col. 4, lines 58-62).

The Examiner has taken the position that Bennett teaches the use of ammonia as the working fluid, and that ammonia has the properties claimed in claims 38-48 for the buoyancy fluid (Office Action, page 5). However, as detailed above, Bennett only mentions ammonia as a possible fluid *if it is dissolved in water*, it is never described as a possible *single* type of fluid and therefore the *combination* of ammonia and water, which is actually described by Bennett, does not have the properties claimed. This is borne out by the fact that Bennett *never* discloses an embodiment that lacks a heating element, and *always* describes the use of such an element in connection with each embodiment disclosed therein. In the invention as claimed herein, there is *no* requirement for a heating element, and such a heating element would be unnecessary by selecting the buoyancy fluid so that it has the claimed properties. Thus, Bennett cannot anticipate the invention of claims 38-48, which claim that the fluid thereof *naturally* has the claimed properties. No fluid disclosed by Bennett “naturally” has the requisite properties, and so Bennett cannot anticipate the invention as claimed in claims 38-48.

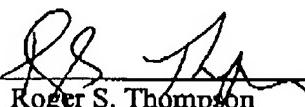
Nor can Bennett render obvious the invention as claimed in claims 38-48, as there would be no motivation for one of ordinary skill in the art, based solely on a reading of Bennett, to modify the apparatus thereof to delete one of the most essential components of that apparatus, the heating element 20, an element which is present in each embodiment disclosed by Bennett. There would be no motivation whatsoever for one of ordinary skill in the art to modify Bennett to remove an essential feature therefrom, to use a type of fluid never taught or suggest, or to move completely contrary to the explicit teachings of Bennett and construct a buoyancy element as claimed herein. The Examiner has not pointed to anything in the art which would point one of ordinary skill in the art to modify the Bennett apparatus to yield the invention of claims 38-48, and so the rejection thereof based on Bennett alone should be withdrawn.

There being no further grounds for objection or rejection, early and favorable action is respectfully solicited.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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